

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

- 1 1. (currently amended) A method for establishing an Internet Protocol (IP)-based
2 Virtual Private Network (VPN) for a voice data call between an originating point of a
3 customer and a terminating point, the originating point associated with a first node and
4 the terminating point associated with a second node, the method comprising the steps of:
5 (a) determining the relative location of [[a]] the terminating point with respect to
6 [[an]] the originating point of a new communication containing the voice data;
7 (b) determining one or more IP addresses to propagate the communication voice
8 packets of the voice call from the originating point to the terminating point;
9 (c) creating adding, at the first node, a VPN identifier in the voice data to each
10 voice packet of the voice call;
11 (d) passing the new communication to the terminating point propagating the voice
12 packets from the first node to the second node; and
13 (e) removing, at the second node, the VPN identifier from the voice data each
14 voice packet of the voice call;
15 wherein the VPN identifier identifies a VPN of the customer.
- 1 2. (currently amended) The method of claim 1 wherein the VPN identifier is an extra
2 field added to an encapsulation coding scheme of the voice data packets.
- 1 3. (original) The method of claim 2 wherein the VPN identifier is an MPLS label.
- 1 4. (original) The method of claim 1 wherein the VPN identifier is a VPN identifier
2 as specified in IETF RFC.2685.
- 1 5. (cancelled)

1 6. (currently amended) The method of claim 1 wherein step (a) further comprises
2 collecting and analyzing dialed digits of the terminating point to determine whether a
3 PSTN gateway function or an inter-VPN gateway ~~functions~~ ~~process the new~~
4 ~~communication function processes the voice call.~~

1 7. (currently amended) The method of claim 1 wherein an IP address of the
2 originating point is from ~~a subscriber's~~ an IP address space of the customer.

1 8. (currently amended) The method of claim 1 wherein an IP address of the
2 terminating point is from ~~a subscriber's~~ an IP address space of the customer or an IP
3 address space of another customer.

1 9. (currently amended) The method of claim 6 wherein the PSTN gateway function
2 ~~further comprises assigning~~ assigns an IP address from ~~a subscriber's~~ an IP address
3 space of the customer to represent a phone from a PSTN.

1 10. (currently amended) The method of claim 6 wherein the inter-VPN gateway
2 function ~~further comprises assigning~~ assigns an IP address from an IP address space of
3 the terminating point to represent the originating point, when communicating with the
4 terminating point.

1 11. (currently amended) The method of claim 6 wherein the inter-VPN gateway
2 function ~~further comprises assigning~~ assigns an IP address from an IP address space of
3 the originating point to represent the terminating point, when communicating with the
4 origination point.

1 12. (original) The method of claim 10 wherein the inter-VPN gateway function
2 translates the IP address of the originating point to the assigned IP address when
3 forwarding voice data to the terminating point.

1 13. (previously presented) The method of claim 11 wherein the inter-VPN gateway
2 function translates the IP address of the terminating point to the assigned IP address when
3 forwarding voice data to the originating point.

1 14. (currently amended) The method of claim 6 wherein the dialed digits are a private
2 number from ~~the subscriber's own~~ a private numbering scheme of the customer.

1 15. (original) The method of claim 6 wherein the dialed digits are a public telephone
2 number.

1 16. (currently amended) An apparatus for supporting IP-based VPN communications
2 for a customer, comprising:

3 ~~at least one~~ a soft-switch which processes call signaling messages from
4 ~~subscribers endpoints of the customer~~;

5 ~~at least one~~ a packet switch having an interface to said ~~at least one~~ soft-switch,
6 said packet switch having a VPN processing module for establishing voice calls on a
7 selection of originating and terminating IP addresses passed to ~~the at least one~~ said soft-
8 switch and ~~at least one~~ said packet switch, said packet switch adapted for operating as an
9 ingress packet switch and an egress packet switch;

10 wherein said packet switch adds a VPN identifier to voice packets of a voice call
11 when said packet switch is operating as an ingress packet switch for the voice call;

12 wherein said packet switch removes a VPN identifier from voice packets of a
13 voice call when said packet switch is operating as an egress packet switch for the voice
14 call;

15 wherein the VPN identifier identifies a VPN of the customer.

1 17. (currently amended) The apparatus of claim 16 wherein said ~~at least one~~ soft-
2 switch is adapted for operating as an ingress soft-switch and an egress soft-switch.

1 18. (cancelled)

1 19. (currently amended) The apparatus of claim 16 wherein the said soft-switch
2 instructs the said packet switch to perform call establishing functions selected from the
3 group consisting of:
4 creating call terminations and contexts;
5 attaching said call terminations to said context;
6 cross-connecting call terminations in a context;
7 ~~inserting and removing VPN identifiers~~; and
8 mapping call terminations to connections.